

The Australian National University

CANBERRA

DEPARTMENT OF MEDICAL CHEMISTRY

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LONDON, N.W.1.

3rd March 1954.

Dear Professor Lederberg,

using two salt bridges to

I am very sorry that the tubes of the two compounds which I sent you arrived broken. Fortunately you had enough of the tetrahydro-compound for your purposes, but I am enclosing a new supply of 5-aminoacridine. I think that the latter might be a better standard in your work than acriflavine. 5-Aminoacridine is only a mono-acidic base, that is it has only one combining centre: But acriflavine has two. The use of acriflavine lends itself to the interpretation that this acridine is ~~linking~~ together two chains of nucleic acid and causing agglutination in this way. With 5-aminoacridine the mode of linkage must be quite different and I would suggest that it lies on the flat portions of two different nucleic acid molecules (those flat portions forming the rungs of Crick and Watson's ladder).

It was very nice of you to write me such a detailed explanation of your work, and I am extremely interested in it. So far everything fits in with the above explanation but that does not mean that it is correct. I am sending you the compounds for which you asked (4-aminoquinoline and its 2-styryl-derivative), also 5-amino-2-hydroxyacridine. I cannot suggest anything more relevant with the information in hand, but I shall be very interested to hear what your results are with these.

Using 5-aminoacridine you should be able to work below pH 6 without difficulty. Of course, that all depends upon what anions are present in your buffer. If one buffer gives trouble, another may be all right.

I was interested in your statement that phase 1 can be agglutinated at pH 9. What happens if it is taken to pH 9 and brought back to pH 7 before the acridine is used? Perhaps it is sensitive to hydroxyl ions and loses a formyl or amino group at pH 9. However, it may be just what you say, that at pH 9 more anions are brought into play, in an organism which tends to lack them.

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Thank you very much for your kind remarks about my book.

With very best wishes to yourself and to Professor Rubbo, if he is still with you,

Yours sincerely,

Adrian Flint

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